

**VARIABLE OPTICAL ATTENUATOR USING
WAVELENGTH LOCKED LOOP TUNING**

ABSTRACT OF THE DISCLOSURE

5

A system and method for automatically attenuating optical signals transmitted in optical systems. The system and method exploits a wavelength-locked loop servo-control circuit and methodology that enables real time mutual alignment of the center wavelength of an optical signal having a peaked spectrum function and transmitted through the optical system, and a center wavelength of a wavelength selective device such as an optical filter element implementing a peaked passband function. The wavelength-locked loop servo-control circuit and methodology particularly is capable of real-time aligning the center wavelength of an optical signal in a range between maximum overlap with the center wavelength of the peaked passband function of the optical filter for maximum transfer of output optical signal by the filter element and minimum overlap with the peaked passband function of the optical filter so that output optical signal may be attenuated in the optical system.